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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/974,924	10/10/2001	Albrecht Mayer	J&R-0748	1097
24131	7590	09/20/2004	EXAMINER	
LERNER AND GREENBERG, PA P O BOX 2480 HOLLYWOOD, FL 33022-2480			BUEHL, BRETT J	
			ART UNIT	PAPER NUMBER
			2183	

DATE MAILED: 09/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/974,924	MAYER, ALBRECHT	
	Examiner	Art Unit	
	Brett J Buehl	2183	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/10/01, 12/26/01, 2/20/02 and 12/15/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>10/10/01, 2/20/02</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-10 have been examined.

Papers Submitted

2. It is hereby acknowledged that the following papers have been received and placed on record in the file: Declaration and Fees as received on 10/10/01, Change of Power of Attorney as received on 12/26/01, Declaration as received on 12/26/01, Change of Power of Attorney as received on 2/20/02, IDS as received on 2/20/02, and IDS as received on 12/15/03.

Information Disclosure Statement

3. The information disclosure statement filed 2/20/02 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Specification

4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
5. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-10 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claim 1 recites the limitation "program running unit" in lines 2-3, 5 and 8. This language is indefinite, as it is unclear what is a "program running unit". Please amend the claim language to more clearly define the metes and bounds of the claimed invention. For the purposes of this office action, this limitation is interpreted as an "execution unit".

See also similar corrections required in claims 1-4, 6 and 8. Dependent claims 5, 7 and 9-10 are rejected for the same reasons as above, as they include the limitations of their parent claims.

9. Claim 5 recites the limitation "at least partially connected" in line 3. This language is indefinite, as it is unclear how the devices can be partially connected. Components in a digital system are either connected, whether directly or indirectly through other devices (coupled), or not connected. For the purposes of this office action, this limitation is interpreted as "connected".

Claim 5 also recites the limitation "and components that can be stopped by said stopping device". This language is indefinite, as it is unclear whether the components are the same components introduced in claim 1 or if new components are being added. Please amend the

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claim language to more clearly define the metes and bounds of the claimed invention. For the purposes of this office action, the limitation is interpreted as the components of claim 1.

Dependent claims 6-7 and 9 are rejected for the same reasons as above, as they include the limitations of their parent claims.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Brooks, U.S. Patent No. 5,678,003.

12. Regarding claim 1, Brooks has taught a programmable unit, comprising:

- a. At least one program running unit for running a program (106 of Figure 2). The CPUs in Figure 3 contain the Instruction Flow Units (106 of Figure 2), which act as execution units.
- b. A stopping device (104 of Figure 2) connected to said program running unit (106 of Figure 2), said stopping device stopping the running of the program by said program running unit (col. 5, lines 21-27).
- c. Other components connected to said stopping device (102, 21', 23', 110 or 14 of Figure 3), said stopping device also causing said other components to be stopped,

in addition to stopping said program running unit with which said stopping device is associated (308 & 310 of Figure 4).

15. Regarding claim 2, Brooks has taught the programmable unit according to claim 1, wherein said other components include at least one further program running unit (102 of Figure 3) and said stopping device able to stop said further program running unit which is not associated with said stopping device (308 and 310 of Figure 4).

16. Regarding claim 3, Brooks has taught the programmable unit of claim 2, wherein said other components which can be stopped by said stopping device include units which are connected to and cooperate with said program running unit and said further program running unit. It is inherent in a computer system that the components connected together "cooperate" with one another for system functionality.

17. Regarding claim 4, Brooks has taught the programmable unit of claim 3, wherein said units are stopped by said stopping device later in time than said program running unit and said further program running unit (308-318 of Figure 4).

18. Regarding claim 5, Brooks has taught the programmable unit of claim 4, including at least one bus, and components that can be stopped by said stopping device are at least partially connected to one another through said bus (25 of Figure 1, Unlabeled in Figure 3).

19. Regarding claim 6, Brooks has taught the programmable unit of claim 5, including bus interfaces and each of said bus interfaces is connected to one of said program running unit and said further program running unit and to said bus, said program running unit and said further program running unit function as bus masters, said units are stopped are stopped only when said bus masters and said bus interfaces have no more data to output and/or are no longer waiting for

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already requested data or data that is still to be requested. Brooks discloses a system with stopping capabilities in response to "an instruction address breakpoint, data address breakpoint, single instruction step, specific JTAG instruction, or the occurrence of any particular event" (col. 6, lines 35-40). An instruction or data address breakpoint could be used to indicate the end of a program, in which case there would be no more data to output or request. The devices in Brooks inherently contain interface logic that allows them to interact with one another through the bus and with the bus arbiter.

20. Regarding claim 8, Brooks has taught the programmable unit of claim 1, wherein after a stopped state of components of the programmable unit which have been stopped is cancelled, said units recommence operation before said program running unit and said further program running unit recommence operation. Brooks discloses that the last unit to stop functioning is the Scan Interface Tool, via the JTAG Interface, which stops all functional clocks. In order for the "program running units", or CPUs, to operate, they would have to be enabled after the functional clocks recommenced operation. This implies that after the stop, the Scan Interface Tool and JTAG Interface units begin operation before the CPUs.

21. Regarding claim 9, Brooks has taught the programmable unit of claim 6, wherein said units function as bus slaves and after a stopped state of components which have been stopped is cancelled, only said bus slaves recommencing operation, and said bus masters recommencing operation only after said bus slaves have recommenced operation (See rejection for Claim 8).

22. Regarding claim 10, Brooks has taught the programmable unit of claim 1, wherein said stopping device is an on-chip debug support module (104 of Figure 2). The Test & Debug Unit disclosed by Brooks encompasses an equivalent function as the OCDS module.

Claim Rejections - 35 USC § 103

23. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

24. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brooks, and further in view of Hennessy.

25. Regarding claim 7, Brooks discloses the invention substantially as claimed. The CPUs act as bus masters in that they are the only units capable of halting the bus and all of the connected devices. The arbiter encompasses a similar function as the bus bridge and, when a data or instruction address breakpoint is used to indicate the end of a program indicating no more data is available, the CPU that encountered the breakpoint stops the other devices. Brooks, however, does not disclose the bus including first and second parts.

While Brooks has taught a single bus comprising all of the limitations of claim 7, Brooks has not explicitly taught the bus comprising a second portion. However, the inclusion of a second bus portion with no reference in the claim as to how it is configured in relation to the first portion of the bus provides no new or unexpected result over the prior art of record. Therefore, one of ordinary skill in the art at the time of the invention would have found it obvious to duplicate the bus, creating a second bus comprising all of the limitations of the first bus of Brooks (see *In re Harza*, 274 F.2d 669, 671, 124 USPQ 378, 380 (CCPA 1960)).

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Alternatively, Hennessy has taught that it was well known in the art at the time of the invention to include in a computer system several buses that allow for additional connectivity to different types of peripheral devices, which “offers the advantage that the processor-memory bus [first bus] can be made much faster than a backplane or I/O bus [second bus] and that the I/O system can be expanded by plugging many I/O controllers or buses into the backplane bus, which will not affect the speed of the processor-memory bus” (Page 658 of Hennessy). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Brooks to contain more than one bus connected through a bus bridge so a wider range of peripheral devices can be coupled to the system resulting a wider range of peripheral devices being able to be coupled to the system without sacrificing the speed of the faster bus.

Conclusion

26. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant is reminded that in amending in response to a rejection of claims, the patentable novelty must be clearly shown in view of the state of art disclosed by the references cited and the objections made. Applicant must show how the amendments avoid such references and objections. See 37 CFR 1.111(c).

27. Inquiries concerning this communication or earlier communications from the examiner should be directed to Brett J. Buehl who can be reached at (703) 305-4663, or <brett.buehl@uspto.gov>. Starting on October 13, 2004, Brett Buehl can be reached at (571)

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272-4161. The examiner can normally be reached between the hours 8:30am – 6:00pm (EST), Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Chan, can be reached at (703) 305-9712. Starting on October 13, 2004, Eddie Chan can be reached at (571) 272-4162. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

28. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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